Reciprocating compressor, in particular CO_2 compressor for vehicle air-conditioning units

CLAIMS

1. Reciprocating compressor (100), in particular CO_2 compressor for vehicle air-conditioning units, with a swivel disk (107), in particular annular in form, that is rotated by a drive shaft (104) and is positioned at an adjustable angle with respect to the drive shaft (104), wherein said disk is connected in an articulated manner to a sliding sleeve (108) that can be moved axially along the drive shaft (104) as well as to at least one supporting element (109) so disposed that it is spaced apart from the drive shaft (104) and rotates therewith, and wherein each of the pistons (106) comprises a joint arrangement (110) with which the swivel disk (107) is in sliding engagement, characterized in that
the articulated connection (116) between drive shaft (104) and swivel disk (107) serves substantially only to transmit torque, and the supporting element (109) serves substantially only to provide axial support to the pistons (106) and hence to absorb the force exerted by the gas.

2. Compressor according to Claim 1,
characterized in that the supporting element (109) is constructed in a spherical, cylindrical or barrel shape and is connected to the drive shaft (104) by way of an in particular rod-like force-transmission element (114).

3. Compressor according to Claim 1 or 2,
characterized in that the force-transmission element (114) associated with an annular swivel disk (107) is a pin that

projects away from the drive shaft (104) at an angle, so that when the swivel disk (107) is tilted at an intermediate position, the pin axis is oriented radially with respect to the swivel disk (107).

4. Compressor according to Claim 1 or 2, characterized in that the supporting element (109) is disposed at the free end of an L-shaped force-transmitting element (114), one limb (126) of which extends approximately parallel to the drive shaft (104) and is supported axially against a bearing plate (127) or similar radial projection that is nonrotatably connected to the drive shaft (104).

5. Compressor according to one of the claims 1 to 4, characterized in that the swivel disk (107) comprises a slot (115) that defines a space to be engaged by the supporting element (109), the long axis of said slot being oriented radially while its longer cross-sectional axis extends in the circumferential direction.

6. Compressor according to one of the claims 1 to 5, characterized in that the center (122) of the supporting element (109) lies on a circular line that either coincides with the circle on which the midpoints of the piston-joint arrangements (110) lie or extends radially slightly beyond said circle.

7. Compressor according to one of the claims 1 to 6, characterized in that two supporting elements (109) are provided, which provide support in axially opposite directions.